

Jan: 7<sup>th</sup> 1829

No 35 James

25 Sanson 5<sup>th</sup> Essay

an

Cholera Infantum;

Presented to the medical Faculty,

of the

University of Pennsylvania

March 1829,

For the degree of

Doctor of Medicine.

By

William B. Baylor

Of

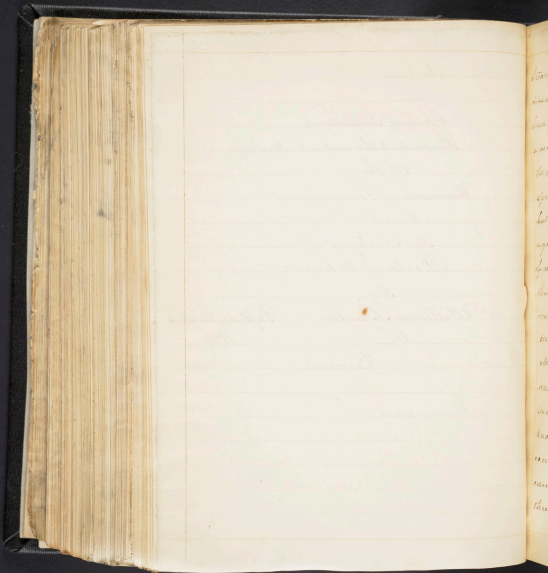
Virginia.

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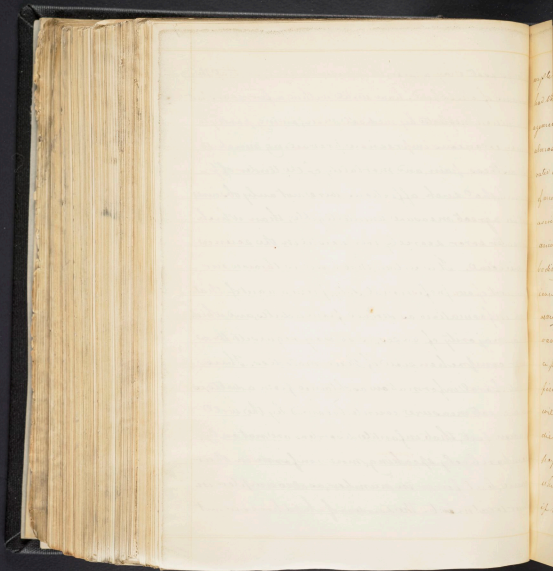
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I am very well satisfied with the Essay.

Wm



Strange as it may appear, it is never the less true, that the diseases of childhood, have until within a few years past been much neglected by medical men; owing partly to a very erroneous impression prevailing much to the distress, pain, and mortality of the tender offspring, that such affections were not only obscure, but in a great measure unintelligible; than which a greater error scarcely ever existed in the science of medicine. It is certain, that a veil is thrown over this part of our professional duty, from a want of that oral information as derived from adults, and which in a majority of cases, is so very requisite to a clear comprehension of their maladies. This want of oral information as obtained from adults, is in a great measure counterbalanced by the well known fact, that infantile disorders are not only, comparatively speaking, more uniform in their cause, but fewer in number, as also simpler in their treatment. The disorders of childhood are not

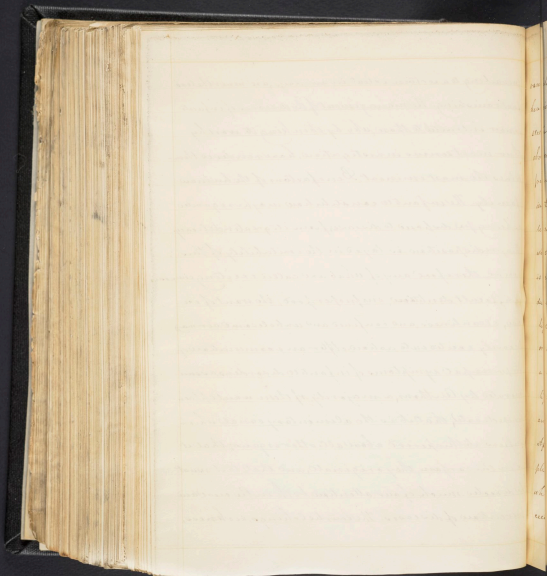




mysteries, and would not have been considered as such,  
had they always been entrusted to proper hands. The man-  
agement of children having been, until very recently,  
almost exclusively confined to nurses, may be enum-  
rated as another cause, tending to retard this branch  
of medical science; and to this circumstance may be  
ascribed many premature deaths. Some symptoms  
unimportant in the eyes of the ignorant, but fore-  
boding ill to the scientific man presents, some inef-  
ficacious or perhaps what is still worse some hurtful  
remedy is administered; the disease continues to ad-  
vance; alarm is excited in the breasts of the parents;  
a physician is called in, who upon his arrival  
finds the disease so deeply rooted, that to eradicate it  
will be beyond the power of his most potent reme-  
dies. Thus is it made evident how important it is, to  
pay early and strict <sup>attention</sup> to those slight affections of infants,  
which are frequently the precursors of some violent  
if not fatal malady. These misfortunes though still

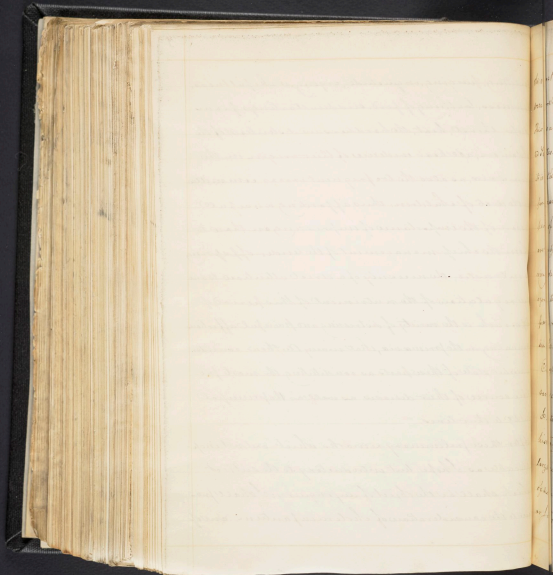


prevailing to a certain extent in our days, and nevertheless  
fast vanishing. The management of the diseases of infants  
is now entrusted to those, who by thinking it worthy  
their most serious investigation, have rendered them-  
selves the most eminent Benefactors of the human  
family. The infantile constitution may be regarded  
as being predisposed to diseases from its greater delicacy.  
This predisposition is layed in the imitability of this  
period, therefore any of what are called exciting causes,  
as difficult dentition, improper food, the want of exer-  
cise, cleanliness, and confined and unwholesome air may  
be easily excited into action. After an examination of  
the principal symptoms of infantile disorders, as enu-  
merated by Authors, a majority of them would plain-  
ly indicate, that it is the alimentary canal which  
suffers at this period above all other organs; that it  
is in this organ, they originate, and that to it must  
be directed much of our attention both in the cure and  
prevention of diseases. The scurvy, cholera, sickness,



vomiting, purging, inquietude, crying, wakefulness, heaviness, loathing of food, sudden startings from sleep, thirst, heat, the hardness and distension of the abdomen, all these evidences of their origin in the *primæ viæ*, as also the too frequent errors committed in the diet of children: thus affording a useful lesson of the importance of impressing on those to whom the chief management of the tender offspring is intrusted, the necessity of a strict attention to and due regulation of the nutriment of this period of life. Such is the variety of distressing and painful affections originating in the *primæ viæ*, that many Authors consider a morbid state of these parts as constituting the most prolific source of their diseases as well as the principal outlet to their lives.

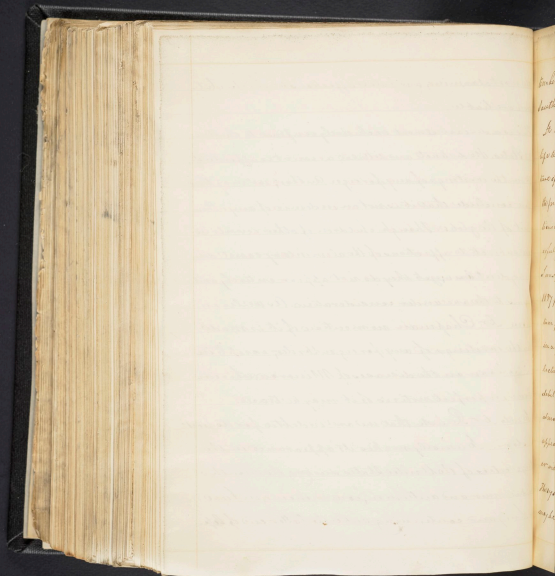
After these preliminary remarks, which are not inapplicable as I hope, but introductory to the subject which shall be the object of my enquiry; I shall proceed to the consideration of cholera infantum, and of



the most alarming and fatal affections to which children are liable.

This is a disease almost exclusively confined to the United States. No distinct and detailed account is afforded of it in the writings of any foreign Author; and may therefore conclude that it is not an endemic of any other part of the globe. Though children of other countries are subject to affections of the alimentary canal during dentition; yet they do not appear entirely analogous to the one under consideration. As well as from Dr Chapman no mention of it is made in the writings of any foreign Author, except in Cleghorn on the diseases of Infants & children some imperfect notices of it may be traced.

I wrote Dr Rush that we are indebted for its first history. It usually makes its appearance in the largest cities of the United States during the months of summer and autumn, commencing in June or July and continuing unto the latter end of Sept.

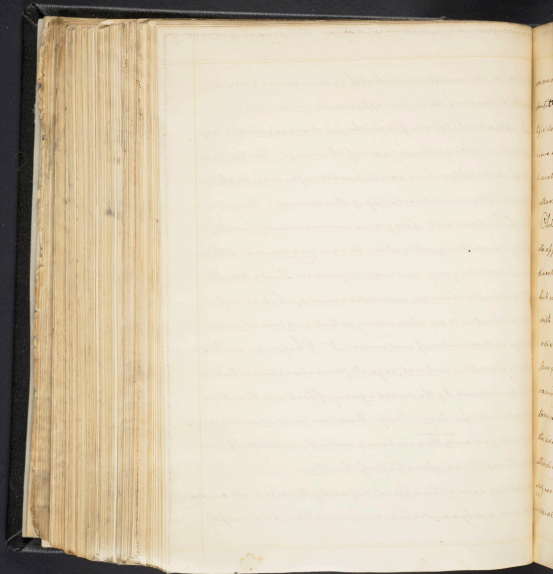




tumbers in the middle states; but of earlier arrival in the South because of the earlier appearance of summer.

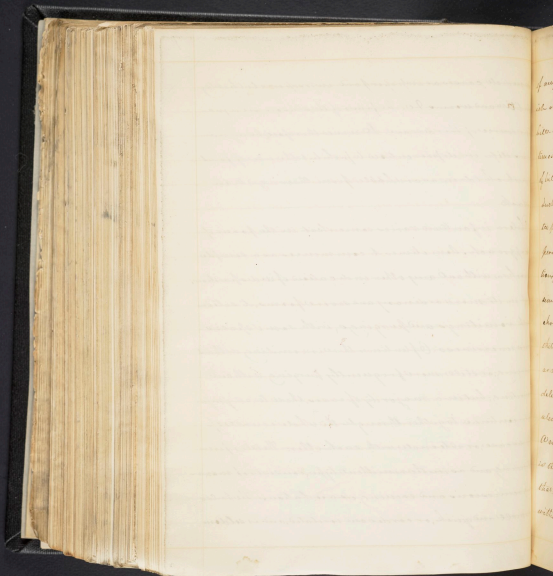
It attacks children from the first or second week of life to the second or third year of their age. The temperature of the weather has considerable influence, both in the production and mortality of this disease. The alternations of heat and cold, of dryness and moisture, operate powerfully in calling into action the exciting causes. Whilst I was pursuing my medical studies in Fred<sup>g</sup> & A<sup>d</sup> in 1837 from the above enumerated causes, cholera infantum prevailed to an alarming extent and proved fatal in a great number of instances. Dr. Chapman in his lectures on this subject, says, its predisposition is laid in debility induced by the direct agency of heat and the vitiated atmosphere of a large city. These two predisposing causes appear to go hand <sup>in hand</sup>, the one being entirely destitute of power without the co-operation of the other.

The system being thus operated upon by these remote causes may be readily excited into diseased action, by any of the

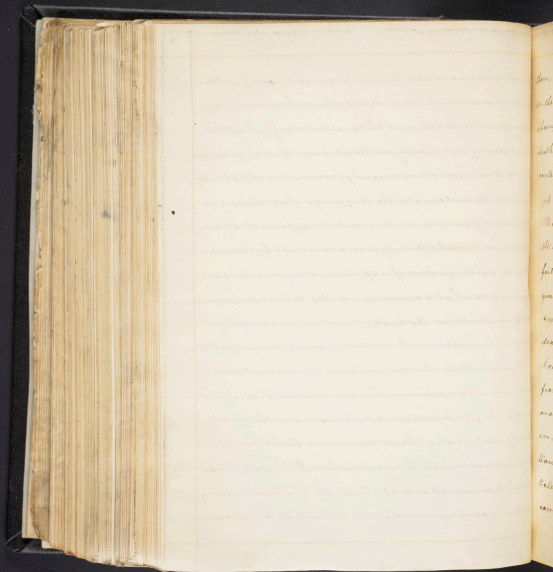


immediate causes are improper food improper clothing  
dentition and worms &c. The fruits of the season are a pro-  
bably source of this disease. It wants therefore by a judi-  
cious step in its prevention to prohibit the use of fruit  
to such children as are liable from their age to an  
attack.

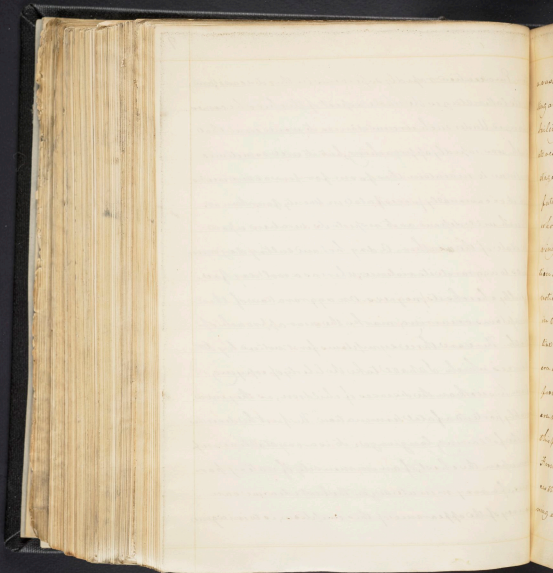
Cholera infantum varies somewhat in the form of  
its approach. Sometimes it commences as a simple  
diarrhoea without any other indication of indisposition;  
but in its more ordinary and severe forms, it begins  
with vomitings and purgings, with some spas-  
modic uneasiness. Often times there is vomiting without  
purging, or still more frequently purging without  
vomiting; but in a majority of cases, these two symp-  
toms continue together through the whole course of  
the disease, or alternate with each other. There is pain  
attending and no intercurrent type, consists of mean-  
ing remissions and evening exacerbations. The pulse  
is small and quick, or corded and irritated, and is seldom



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of any other character. The discharges consist of yellowish or greenish matter indicating the presence of bile. Sometimes they are thin and watery, at other times slimy and bloody without any other indication of bile. Worms are occasionally present in the stools. Such is the violence of the purgings that the ingesta pass off unaltered. Much pain appears to be experienced by the little sufferer, or evinced by his actions, in consequence of a spasmodic uneasiness similar to what occurs in adults labouring under cholera morbus. The head, from its intimate sympathetic connection with the stomach, is early affected as manifested by the expression of the eyes and also by delirium. The abdomen becomes tense from flatulency. The feet become oedematous as also the face. A very distressing thirst harasses the patient. Such is the insensibility of the system that Dr. Rush says, that he has seen flies to alight on the eyes when open, without exciting a motion in the eyelids to remove



them. Eruption rapidly supervenes in this disease, and in the latter stages the whole aspect of the chest becomes changed. Under such circumstances it would seem that death was rapidly approaching; but it will sometimes continue to maintain this form for five or six weeks, yet it occasionally proves fatal in twenty four hours. Much will depend as it respects its duration upon the state of the weather. A dry hot and sultry day more fails to aggravate its violence; whereas a cool day frequently checks its progress. An aggravation of these symptoms occurring marks the near approach of death. There are three symptoms first noticed by Dr. Serravallo which I shall take the liberty of copying from his work on the diseases of children, as they invariably portend a fatal termination. The first he describes in the following language: it is a crystalline eruption upon the chest, of an immensity of watery particles, of a very minute size. The best idea we can convey of the appearance of this eruption, is to imagine



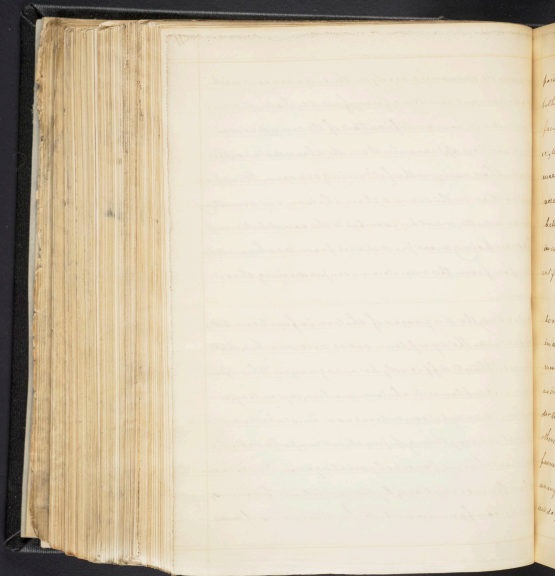


a vast collection of vesicles, apparently produced by flitting an equal number of very minute drops or particles of boiling water, and each particle producing its appropriate vesicle. There is another symptom attending the last stage, which is much more common, but not less fatal; which is the thrusting the fingers, nay the whole hand, into the mouth as if desirous of removing something from the throat. And we may mention another which we do not remember to have ever noticed; which is the escape of a line worm or worms in the chronic forms of this affection. After an attention & consideration of the symptoms specified in cholera infantum, it does not appear to be a disease distinct from the intermittent or remitting fevers or the cholera morbus of adults. Dr. Keisk in speaking of this part of the subject uses the following language From the discharges of bile, which generally introduce this disease, from the morbid remissions and evening exacerbations of the fever which accompanies it;



and from its occurring nearly in the same season with the cholera and remitting fevers of adults, I am disposed to consider it, as a modification of the same disease. For its earlier appearance than the above diseases, the same author assigns the following reason. Its appearance earlier in the season, than cholera and remitting fever in adults, must be ascribed to the constitution of children being more predisposed from weakness to be acted upon from the remoter cause producing those diseases.

Respecting the diagnosis of cholera in infants little need be said. The symptoms are so well marked, that it may without difficulty be recognized. When from its near resemblance to cholera morbus, dysentery, or diarrhoea, it may be considered as a mistake in name and not in anything of practical importance, the treatment being precisely analogous. Cases induced by different dentures, by the irritation of worms, may be confounded with it. In those cases of inco-



position from itching, a similarity of *uric* an *anemic* both cases. The season of the year at which cholera & infantum appears, its being at that time prevailing epidemic, together with those symptoms indicative of the presence of worms, as a voracious appetite, picking of the nose &c. *uric* constitutes a very evident diagnosis, between these two affections. There may also be remarked in addition, that the excretions in cholera are very different from those in diseases induced by worms.

Concerning the prognosis, some difficulty will be experienced. To lay down unequivocal prognostics in any disease would be a difficult task, and in none more so than in the one under consideration. In this as in many other diseases, recoveries take place under the most discouraging circumstances, whilst others on the contrary, prove fatal under the most favourable prognostics. Should this complaint attack an infant of delicate constitution during excessively warm and dry <sup>weather</sup>, should there be violent vomiting, not yielding

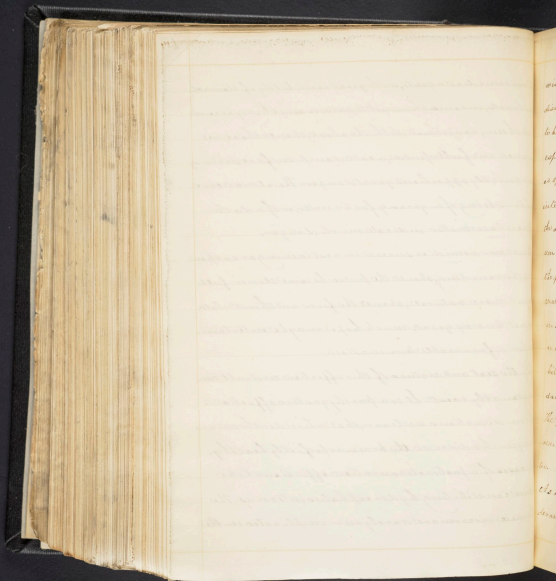


to our remedial agents, with great irritability of stomach  
and bowels; inasmuch as not to retain anything comes  
into them, conjoined with the above, should there be  
a quick and full pulse, a cold damp surface, may  
reasonably apprehend great danger. The veins even  
without being of a greenish foetid color, or of a dark  
fecocolored matter indicate much danger.

V

Should our remedies succeed in restraining or suspend-  
ing the vomiting, should the pulse become slower full  
or and more natural, should the fever and thirst abate,  
or not be very great, much hope may be entertain-  
ed for a favorable termination.

Of the seat and nature of this affection no doubt can  
reasonably exist. It is a purely gastric affection.  
From dissections we learn, that where death occurs  
early in this disease the brain is perfectly healthy;  
in cases of a protracted duration effusions take  
place constituting hydrocephalus internus. The  
thoracic viscera are rarely seen implicated in the





mischief. The abdominal viscera are those upon which this  
 disease expends its violence. The traces of inflammation are  
 to be seen throughout the whole alimentary canal, and  
 especially on the mucous coat, in which are dark colour-  
 ed spots, confined principally to the duodenum. The large  
 intestines do not appear to suffer except in cases where  
 the disease assumes the form of dysentery. The periton-  
 eum occasionally presents <sup>appearance</sup> similar to those noticed in  
 the puerperia. The hepatic apparatus is in every instance  
 materially affected. The liver undergoes an enlargement  
 in size, or is altered in structure, being either indurated,  
 or what more commonly occurs soft and flabby. The  
 biliary ducts and gall bladder are loaded with a large  
 dark green colour, much altered from its healthy state.  
 The pancreas and spleen are more affected, perhaps the  
 remaining contents of the abdomen ever observed implicat-  
 ed.

#### Of the treatment.

The cholera infantum commences with such evident  
 derangement of the puerperia, the first and most obvious



indications to be fulfilled, is to evacuate the contents of the bowels and thus remove what may prove offensive. In mild cases where purgatives can be retained, a gentle cathartic as castor oil may be administered. The exhibition of a little bland an em occasionally, together with the use of mild cathartics will prove efficient. Frequently such is the violence of the disease, attended with such excessive vomiting, that purgative medicines can not be retained. The necessity under such circumstances, of having recourse to such means, as will calm the very great irritability of the stomach is very obvious. Dr. Ferrius in a case like the present, recommends an injection composed of three trapa-spones of camomile salt in a gill of warm water, for a child a year old and upwards, and proportionably less for our younger. This if <sup>it</sup> be speedy in its operation will quickly produce quieting effects and should be repeated according to circumstances; that is if the vomiting be not restrained or suspended. This may also under sim-



ilar circumstances judiciously prescribe and give injections, we may use fomentations to the stomach and the warm bath, to allay the irritability. A strong infusion of coffee in doses of a tea-spoonful has a wonderful effect, in allaying the disturbances of the stomach and thus preparing the way for the exhibition of more efficient means.

Our object being alluvance namely the quieting of irritation; we may then resort to calomel in small doses, as ʒss either alone; or what would be better combined with a very minute portion of opium to be given at an interval of an hour until the desired effect is produced; as indicated by the discharges being more copious less frequent and of a dark green colour. When this occurs, the above prescriptions may be given at longer intervals, of two three or four hours, according to the symptoms. Sometimes vomiting may be occasioned by the presence of some foreign matter in the stomach. In such a case we may en-



courage vomiting, or rather facilitate the rejection of the offending substance, by draughts of warm water, or we may according to the recommendation of Professor Chapman, use an emetic of ipecacuanha, & then resort to calomel and opium as prescribed above. Some eminent Practitioners oppose most violently the use of emetics, or above recommended, but whether with propriety does not appear to physicians. —

This treatment must be pursued in the acute forms of cholera, until the alarming symptoms subside. Anodyne injections may be occasionally resorted to with much relief during this part of the treatment. The fever which usually attends, can be very effectually combated, by general and topical blood-letting. The application of leeches to the epigastrium, if there be great gastric distress, or to the temples, if there were cerebral determination, will be beneficial; if the fever run high. Calomel appears to be the main dependence of the Physicians in this very formidable af-





fection. It is by it alone that we can expect to remove the deranged actions of the internal organs & deeply im-  
plicated.

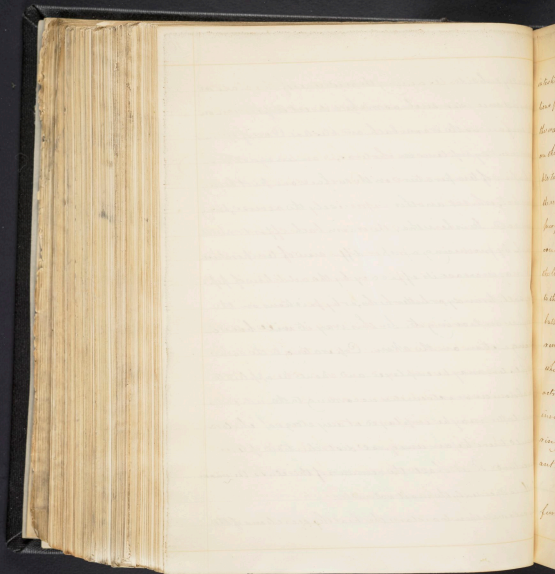
So soon as the alimentary canal is completely evac-  
uated, we should desist from the use of purgatives, un-  
less there is reason to believe, or an accumulation of  
bilious and other effluvia <sup>in the</sup> or congestion in the hepatic  
apparatus has taken place. The canal course is laid  
down above may be pursued.

After having completely evacuated the primæ viæ, our next  
object should be to administer such medicines as will calm  
irritation and determine to the surface. With such an  
object in view, we may judiciously prescribe a  
combination of cal. opi & ipecac. The following is  
a good formula: take of opium ʒss, calomel ʒss  
ipecac ʒss m. & divide; one of these powders may be  
given every six or three hours. These medicines seldom  
fail to calm irritation of the intestinal canal, which  
happening, the troublesome and various discharges



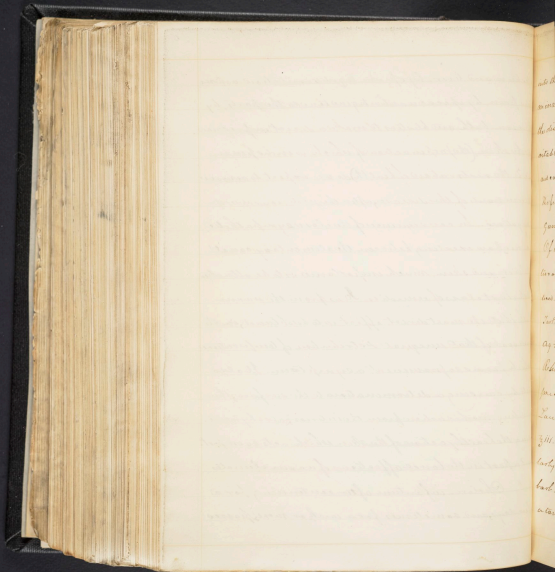
usually subside. As aiding the medicines of this class we may administer such as make a direct impression on the surface as the warm bath and blisters. One of the most prominent symptoms in cholera, is an unequal distribution of temperature on the surface, one part being very hot, whilst another is precisely the reverse, being very cold. It is here that the warm bath affords much relief by producing a proper diffusion of temperature. We may increase its efficacy by the addition of pepper, salt, brandy, or better herbs, or by frictions on the surface on leaving it. In this way it will have a strong action on the skin. Cooperating to the same end, blisters may be employed and should be applied to the abdomen or extremities according to the indication. These latter may be employed at any stage of cholera should there be an unequal distribution of temperature. Out of all the remedies of this class the warm bath is decidedly the most valuable.

By calomel then to restore the healthy secretions of the

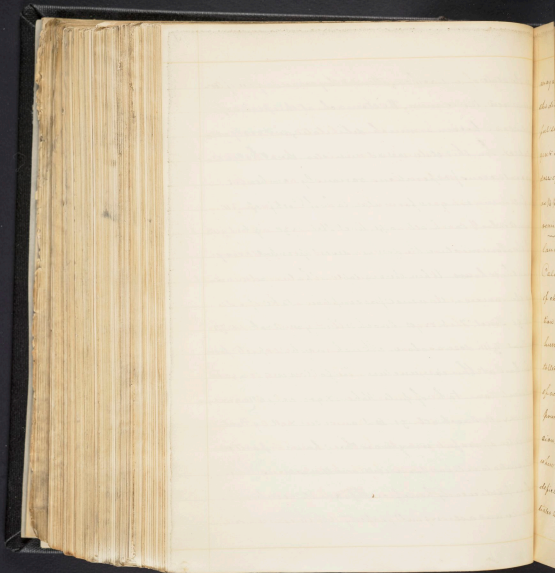


intestines and liver, by opium to quiet irritation and relieve pain, by ipecacuanha to give tone to the parts, by the warm bath and blisters to make a direct impression on the skin (the proper action of which is indispensable to the restoration of health) so we expect to remove the remnants of the disease, after the judicious use of purgatives. In consequence of the close sympathetic connection existing between the abdominal cavity and the liver and skin, much importance is to be attached to the last class of remedies. It is from the warm bath that the most direct effect is to be obtained, in the removal of that unequal distribution of temperature which forms so prominent a symptom. It also acts by causing a determination to the surface, thus inviting morbid action from the interior, also by restoring the healthy action of the skin which acts so important a part in the lower affections of warm climates.

Cholera infantum after continuing for a few days, and sometimes for a week or more, passes

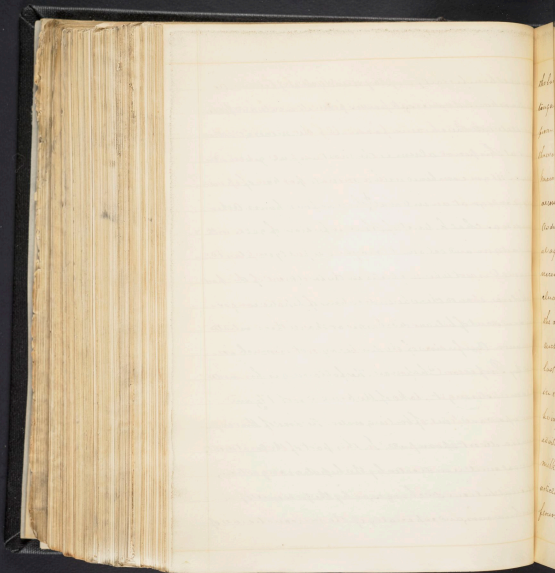


into the state of a diarrhoea, attended by some degree of tormina and tenesmus. The stomach at this period of the disease becomes much debilitated, and very irritable. In this state we administer the alkaline and exstercous preparations variously combined. The following is a good formula—take of Coct prep ʒii Gum Arabic & Sacch. alb. aa ʒi, Tinct. Theb. xvʒtt. ag Faust ʒiii. Of the above mixture the dose is a dessert spoonful every two or three hours. When the irritable alkali is administered the annex is the usual prescription—take of Sal. Tart. ʒi Tinct. Theb. xvʒtt. Sacch. alb. & Gum Arab. aa ʒi ag Faust ʒiii. dose as above. Much may be expected from Rubarb at this conjunction. The following is a good prescription—take of pulv. Rubei: xʒss. cal. Magxxʒss. Laud. xvʒtt. Sacch. alb. ʒi Tinct. anisee ʒss ag Faust ʒiii. A tea spoonful every two or three hours is particularly suited to relieve tormina and tenesmus. Rhubarb is particularly beneficial from its combining a tonic and astringent property. At this period we





may also beneficially employ anodyne injections. As the diarrhoea advances, it passes from its acute and painful state into the chronic form. Of the mineral waters given at this period alum is the most useful given in doses of  $\text{ʒss}$  grs combined with a minute portion of opium as  $\text{ʒss}$  or  $\text{ʒss}$  at an interval of three or four hours. Other remedies as chalk, tinct of Rhus infusion of galls with Laudanum and calomel may be usefully employed. Calomel is not to be neglected in the treatment of this part of cholera, should there be indications of hepatic congestion or a want of bilious discharges or should there be vitiated humours. An infusion of the dew berry root is much extolled by Professor Chapman. The following is his mode of administering it. Take of the bruised root  $\text{ʒij}$  and pour upon it pint of boiling water. The dose of this infusion is a dessert spoon full. In this part of the treatment, where calomel is indicated by the hepatic congestion, deficient bilious discharges, or by the presence of vitiated humours, and especially if the mucous lining of



the bowels be much deranged as indicated by the loaded tongue and slimy stools, may we expect much benefit from spirits of turpentine in doses of from 5 to 10.0 grt three or four times per diem. Dr. Dewees says that he has known this remedy prove successful when all hope of recovery was past.

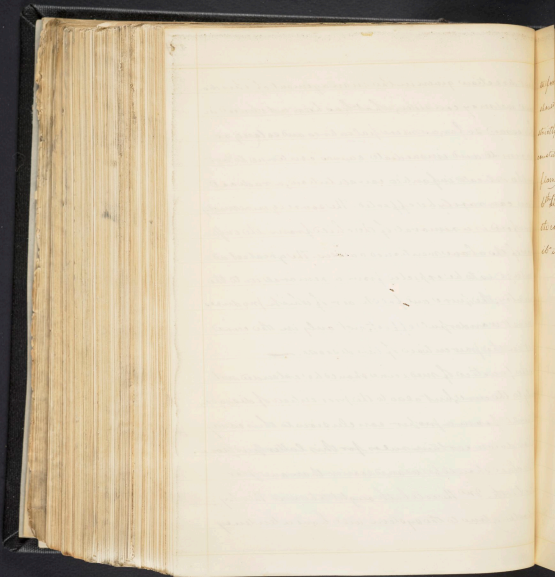
No diet constitutes a very important part of our remedial agents, not only in this but in all other diseases; it is necessary that due attention be paid to it before concluding. During the first stages of cholera infantum the only diet should be that of breast milk; and of such importance does Dr. Dewees consider this last direction, that he directs a nurse to be procured, in case the child has been weaned. Should this last be impracticable, we may substitute milk sweetened with the best loaf sugar or barley or rice water and milk. In the more advanced stages the farinaceous articles, as arrow root, tapioca, sago rice or boiled flour. From the great importance attached to the



last direction given in the management of this disease we may consider, what has been advanced in this essay so far, as mercurial in the and so long as the remote and immediate causes continue to act on the delicate infantile constitution, a radical cure can rarely be effected. The sovereign remedy therefore is a removal of the child from the influence of the above mentioned causes. The greatest advantage is to be expected from a removal into the country; the pure and fresh air of which produces a most wonderful effect; not only in the cure but in the prevention of this disease. —

As the practice of medicine should be extended not only to the cure, but also to the prevention of disease, it will form a proper conclusion to this essay to lay down certain rules for this latter purpose.

1<sup>st</sup> The child should be weaned sooner than one year after birth. 2<sup>nd</sup> The rock bath ought to be used this by importing time to the system will have a tendency



to fortify the infant against an attack. 3<sup>d</sup> The nipple  
 should be worn next the skin. 4<sup>th</sup> The diet ought to be  
 strictly attended to. Milk with the farinaceous articles  
 constitutes the proper diet: 5<sup>th</sup> During <sup>the winter</sup> should there be  
 inflammation of the gums they ought to be freely lavated.  
 6<sup>th</sup> The only effectual preventive is a removal into  
 the country, before the season arrives to which  
 it is peculiar.

Finis

